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QUERY CONTROL FORM			RTIS USE ONLY	
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|----------------------|------------------------|--------------------|----------------|
| a. Serial No. | f. Foreign Priority | k. Print Claim(s) | p. PTO-1449 |
| b. Applicant(s) | g. Disclaimer | l. Print Fig. | q. PTOL-85b |
| c. Continuing Data | h. Microfiche Appendix | m. Searched Column | r. Abstract |
| d. PCT | i. Title | n. PTO-270/328 | s. Sheets/Figs |
| e. Domestic Priority | j. Claims Allowed | o. PTO-892 | t. Other |

SPECIFICATION	MESSAGE
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i. Appendix	
j. Amendments	
<input checked="" type="checkbox"/> k. Other	On page Y, line 12 makes a reference to A Figure 10 but there is no Figure 10 in the drawings sheet of this file.
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barrier metal layer are adversely affected.

Peeling-off of the organic insulating film of a low dielectric constant easily occurs, because of poor adhesion to a silicon wafer or SiO₂ film. Furthermore, the organic insulating film has the disadvantage that its heat resistivity is low. Its thermal decomposition temperature is around 400°C. The disadvantage of low heat resistivity poses a problem for annealing a wafer at a high temperature.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a method for forming an interlayer insulating film having good moisture absorption resistance, good heat resistivity and a low dielectric constant, a semiconductor device using the interlayer insulating film, and a semiconductor manufacturing apparatus for forming the interlayer insulating film.

According to the method for forming the interlayer insulating film according to the
present invention, as illustrated in FIG. 1C, the film is formed on a substrate by plasma enhanced
chemical vapor deposition using a source gas (or a reaction gas) containing a Si-C-O-H
compound, O₂ and B₂H₆. B (boron), C (carbon) and H₂O are contained in the film thus formed.
The inventor found that when this film is annealed using an O (oxygen) plasma, C (carbon) and
H₂O in the film are released from the film and thus many voids are created in the film, as
illustrated in FIG. 1D. Thus, a porous SiO₂ film containing B (boron) can be formed on the

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